

• Atty. Docket No.: 2000/US
Previously (40222.0003US01)
Serial No.: 09/939,141

AMENDMENTS IN THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (Original) A method for the production of a polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings, the method comprising:

passing an electric current between two or more electrodes immersed in an electrolytic mixture comprising an ester, an electrolyte and an aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings.

2. (Original) The method of claim 1 wherein the electrolyte in the electrolytic mixture comprises of one or more of LiPF₆, NaPF₆, KPF₆, LiBF₄, NaBF₄, KBF₄, (CH₃)₄NPF₆, (CH₃)₄NBF₄, (C₂H₅)₄NPF₆, and (C₂H₅)₄NBF₄.

3. (Original) The method of claim 1 wherein the electrolytic mixture further comprises a solvent.

4. (Original) The method of claim 3 wherein the solvent dissolves the ester.

5. (Original) The method of claim 1 wherein the ester is selected from the group consisting of a simple ester, a carbonic ester, a lactone, a complex ester, and mixtures thereof.

6. (Original) The method of claim 1 wherein the ester is a simple ester selected from the group consisting of methyl formate, ethyl formate, methyl acetate, ethyl acetate, methyl propionate, ethyl propionate, methyl butyrate, and mixtures thereof.

7. (Original) The method of claim 1 wherein the ester is a lactone selected from the group consisting of β -propiolactone, γ -butyrolactone, δ -valerolactone, ϵ -caprolactone, and mixtures thereof.

8. (Original) The method of claim 1 wherein the ester is a carbonic ester selected from the group consisting of ethylene carbonate, propylene carbonate, butylene carbonate, dimethyl carbonate, diethyl carbonate, ethyl methyl carbonate, and mixtures thereof.

9. (Original) The method of claim 3 wherein the solvent is selected from the group consisting of acetonitrile, propionitrile, benzonitrile, nitromethane, nitroethane, nitrobenzene, tetrahydrofuran, diethyl ether, dimethoxyethane, dioxane, dichloromethane, dichloroethane, benzene, toluene, chlorobenzene, fluorobenzene, and mixtures thereof.

10. (Original) The method of claim 1 wherein the concentration of ester in the mixture is greater than 20% by volume.

11. (Original) The method of claim 1 further comprising one or more electrodes used as reference electrodes for voltage control.

12. (Original) The method of claim 1 wherein the electrodes are comprised of one or more of platinum, nickel, stainless steel, copper, carbon, PbO_2 , and titanium coated with platinum or PbO_2 .

13. (Original) The method of claim 1 wherein the electrolytic mixture further comprises a polymer having at least one unit having at least one cyclopentane structure condensed with at least two aromatic rings.

14. (Amended) The method of claim 13 wherein the polymer is deposited on the one or more electrodes in claim 1.

15. (Amended) The method of claim 1 wherein the concentration of the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is in the range of 0.001-1 mol/L.

16. (Amended) The method of claim 1 wherein the concentration of the electrolyte is in the range of 0.001-1 mol/L.

17. Withdrawn (Not Elected)

18. Withdrawn

19. Withdrawn

20. Withdrawn

21. (Amended) The method of claim 1 wherein the polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings is poly(9-fluorenone) and the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is fluorene.

22. (Amended) The method of claim 1 wherein the polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings is poly(cyclopenta[def]phenanthrene-4-one) and the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is 4H-cyclopenta[def]phenanthrene.

23. (Amended) The method of claim 1 wherein the polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings is poly(8H-cyclopenta[def]fluoren-4-one) and the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is 4,8-dihydro-cyclopenta[def]fluorene.

24. (Amended) The method of claim 1 wherein the polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings is poly(cyclopenta[def]fluorene-4,8-dione) and the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is 4,8-dihydro-cyclopenta[def]- fluorene.

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25. (Amended) The method of claim 1 wherein the polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings is poly(benzo[*b*]fluoren-11-one) and the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is 11*H*-benzo[*b*]fluorene.

26. (Amended) The method of claim 1 wherein the polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings is poly(dibenzo[*b,h*]fluoren-12-one) and the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is 12*H*-benzo[*b,h*]fluorene.

27. (Amended) The method of claim 1 wherein the polymer having at least one unit that contains at least one cyclopentanone structure condensed with at least two aromatic rings is poly(indeno[1,2-*b*]fluorene-6,12-dione) and the aromatic compound having at least one cyclopentane structure condensed with at least two aromatic rings is 6,12-dihydro-indeno[1,2-*b*]fluorene.

28.-75. (Withdrawn)